

## LETTER TO THE EDITOR

# The role of general practitioners in the follow up of type 1 diabetic patients with insulin pump therapy

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## Dear Editor

A quarter of a century after its introduction, continuous subcutaneous insulin infusion (CSII) is widely used in clinical practice; it is estimated (largely from pump sales) that there are now more than 200 000 patients with diabetes worldwide using CSII for their everyday treatment, with more than 130 000 in the US alone<sup>1</sup>. General practitioners are the cornerstone of most national health systems. The role of general practice and outpatient diabetes clinics in the management of diabetes is still a matter of debate<sup>2</sup>. This letter reports our initial clinical observation on the contribution of rural GPs in the management of type 1 patients with diabetes treated with insulin pumps.

Twenty-two patients (9 males) from the rural regions of southern Greece, treated with CSII, were followed up from

January 2002 to January 2003 in our diabetes center. The mean age at initiation of CSII was 33 years (SD:11) and diabetes duration 18 years (SD:9). Every month the patients provided to the GPs and rural doctors of their regions information concerning their metabolic control; and every 3 months the patients were examined for weight, HbA1c, cholesterol, HDL, triglycerides, aminotransferases, urea, creatinine, total protein in 24h urine collection, as well as the frequency of blood glucose monitoring, insulin doses, number of insulin injections per day (prepump), emergency department visits, hospitalisations, infusion site infections, and episodes of severe hypoglycemia and referred to diabetes specialist. A program of structured meetings was implemented, during which GPs were educated by experts on the implementation of CSII therapy.



Normal distribution of continuous variables was assessed using the Kolmogorov-Smirnov test. Normally distributed data were analyzed with paired *t*-test and skewed data were analyzed with the Mann Whitney-*U* test. Categorical variables were analyzed with McNemar's test. Statistical analysis was performed with SPSS vers 10.0 (SPSS Inc; Chicago, IL, USA). Statistical significance was set at  $p < 0.05$ .

HbA1c was improved from 9.4 (SD:1.4) to 8.1 (SD:1.5) ( $p < 0.001$ ). Mean daily insulin dose was decreased from 63 (SD:14) to 42 (SD:13) ( $p < 0.001$ ). The incidence of hypoglycaemia fell from 13 (SD:15) to 6 (SD:10) ( $p = 0.002$ ). Patients expressed a higher treatment satisfaction from CSII than from the previous therapy. The BMI, aminotransferases, urea, creatinine, lipids (excluding triglycerides that showed significant improvement) remained stable.

This study suggests that the role of GPs in the follow up and metabolic control of patients on CSII is important. Our results showed that frequent visits to GPs and diabetic specialists led to substantial improvement of metabolic parameters (HbA1c, daily insulin requirements), fewer hypoglycemic episodes and better quality of life. The role of GPs could be critical regarding the implementation of CSII therapy in type 1 patients with diabetes, with poor glycemic control who live in remote rural regions. These patients seem to have difficulty in making contact with specialised diabetes centers.

The close cooperation of the diabetes specialist with the GP, as well as continuous education and psychological support of patients are of cardinal importance in DM therapy in regions where contact with specialised diabetes centers is difficult due to geographical conditions.

Our study implied that the results of diabetic patients' care on CSII treatment in the context of distant rural practice are encouraging. Properly trained rural physicians can provide medical care of high quality to patients with diabetes. These findings reinforce the concept that the involvement of GPs in

advanced diabetes care can represent a valid solution to the problem of the rising prevalence of the disease.

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